

THAT WHICH IS CLAIMED IS:

1. A method which comprises reducing formation of corrosive sulfur-containing decomposition products of an inorganic thiocyanate in a downhole oilfield operation in which an inorganic thiocyanate corrosion inhibitor is used in a concentrated aqueous brine solution by providing as the concentrated aqueous brine solution in said operation a concentrated aqueous brine solution in which there is an absence of a thiocyanate-decomposing amount of methanol.
2. A method as in Claim 1 wherein the brine solution that is provided is an aqueous sodium bromide solution containing in whatever form(s) in which sodium bromide becomes and/or exists while in solution in said aqueous solution, an amount thereof in the range that corresponds to about 38 to about 47 wt% of anhydrous sodium bromide.
3. A method as in Claim 1 wherein the brine solution that is provided is an aqueous calcium bromide solution containing in whatever form(s) in which calcium bromide becomes and/or exists while in solution in said aqueous solution, an amount thereof in the range that corresponds to about 48 to about 57 wt% of anhydrous calcium bromide.
4. A method as in Claim 1 wherein the brine solution that is provided is an aqueous zinc bromide and calcium bromide solution containing in whatever form(s) these two bromides become and/or exist while both are in solution in said aqueous solution, an amount thereof in the range that corresponds to about 53 to about 60 wt% of anhydrous zinc bromide and in the range that corresponds to about 17 to about 22 wt% of anhydrous calcium bromide.
5. A method as in Claim 1 wherein said aqueous brine solution is an aqueous metal halide brine solution.
6. A method as in Claim 5 wherein said metal halide brine solution is a metal halide brine solution formed from at least one metal bromide and at least one metal chloride.
7. A method as in Claim 5 wherein said metal halide brine solution is a metal halide brine solution formed from at least two different metal bromides.

8. In an oilfield operation in which an inorganic thiocyanate corrosion inhibitor is used in a concentrated aqueous brine solution, the improvement which comprises reducing formation of corrosive sulfur-containing decomposition products of an inorganic thiocyanate in said operation by utilizing as the concentrated brine solution a concentrated brine solution in which there is an absence of a thiocyanate-decomposing amount of methanol.

9. The improvement of Claim 8 wherein the brine solution that is utilized therein is an aqueous sodium bromide solution containing in whatever form(s) in which sodium bromide becomes and/or exists while in solution in said aqueous solution, an amount thereof in the range that corresponds to about 38 to about 47 wt% of anhydrous sodium bromide.

10. The improvement of Claim 8 wherein the brine solution that is utilized therein is an aqueous calcium bromide solution containing in whatever form(s) in which calcium bromide becomes and/or exists while in solution in said aqueous solution, an amount thereof in the range that corresponds to about 48 to about 57 wt% of anhydrous calcium bromide.

11. The improvement of Claim 8 wherein the brine solution that is utilized therein is an aqueous zinc bromide and calcium bromide solution containing in whatever form(s) these two bromides become and/or exist while both are in solution in said aqueous solution, an amount thereof in the range that corresponds to about 53 to about 60 wt% of anhydrous zinc bromide and in the range that corresponds to about 17 to about 22 wt% of anhydrous calcium bromide.

12. A method of formulating a concentrated brine solution for downhole operations wherein an inorganic thiocyanate corrosion inhibitor is used as an ingredient of the solution, which method comprises ensuring that the brine solution does not contain a thiocyanate-decomposing amount of methanol.

13. A method as in Claim 12 wherein a portion of the concentrated brine solution is subjected to analysis to ensure that the brine solution does not contain a thiocyanate-decomposing amount of methanol.

14. A method as in Claim 13 wherein a portion of the concentrated brine solution is subjected to the analysis prior to addition of an inorganic thiocyanate corrosion inhibitor to the solution.

15. A concentrated aqueous brine solution adapted for use in downhole operations and which does not form of corrosive sulfur-containing decomposition products from an inorganic thiocyanate corrosion inhibitor despite the presence therein of an inorganic thiocyanate corrosion inhibitor, said solution comprising water containing in solution therein:

- a) in the range of about 38 to about 47 wt% of sodium bromide in whatever form(s) in which sodium bromide becomes and/or exists wherein solution in said solution; or
- b) in the range of about 48 to about 57 wt% of calcium bromide in whatever form(s) in which calcium bromide becomes and/or exists when in solution in said solution; or
- c) a mixture in the range of about 53 to about 60 wt% of zinc bromide and in the range of about 17 to about 22 wt% of calcium bromide in whatever form(s) or composition(s) these two bromide salts become and/or exist when they both are in solution in said solution; and
- d) in the range of about 0.2 to about 5 wt% of at least one water-soluble inorganic isocyanate corrosion inhibitor in whatever form(s) in which said at least one corrosion inhibitor becomes and/or exists when in solution in said solution; and wherein:
- e) the percentages specified in a), b), and c) are based on the weight of the specified metal bromide(s) and water only, and the percentages specified in d) are based on the total weight of the concentrated aqueous brine solution of a), b), or c), and including the weight of any and all additive(s) in the concentrated aqueous brine solution; and
- f) said concentrated aqueous brine solution is devoid of a thiocyanate-decomposing amount of methanol whereby the formation of corrosive sulfur-containing decomposition products due to interaction between methanol and said inorganic thiocyanate corrosion inhibitor cannot occur.

16. A concentrated aqueous brine solution as in Claim 15 wherein said solution contains a) rather than b) or c).

17. A concentrated aqueous brine solution as in Claim 15 wherein said solution contains b) rather than a) or c).

18. A concentrated aqueous brine solution as in Claim 15 wherein said solution contains c) rather than a) or b).

19. A method as in any of Claims 1-7 wherein said inorganic thiocyanate consists essentially of sodium thiocyanate, potassium thiocyanate, ammonium thiocyanate, or a mixture of any two or all three of them.

20. The improvement as in any of Claims 8-11 wherein the inorganic thiocyanate in said operation consists essentially of sodium thiocyanate, potassium thiocyanate, ammonium thiocyanate, or a mixture of any two or all three of them.

21. A method as in any of Claims 12-14 wherein said inorganic thiocyanate consists essentially of sodium thiocyanate, potassium thiocyanate, ammonium thiocyanate, or a mixture of any two or all three of them.

22. A concentrated aqueous brine solution as in any of Claims 15-18 wherein d) consists essentially of sodium thiocyanate, potassium thiocyanate, ammonium thiocyanate, or a mixture of any two or all three of them.